

N-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material OR Total Petroleum Hydrocarbon) by Extraction and Gravimetry
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Facility Name: _____ VELAP ID: _____

Assessor Name: _____ Analyst Name: _____ Inspection Date: _____

Relevant Aspect of Standards	Method Reference	Y	N	N/A	Comments
<i>Records Examined:</i> SOP Number/ Revision/ Date _____ Analyst: _____ Sample ID: _____ Date of Sample Preparation: _____ Date of Analysis: _____					
Were liners and glassware involved cleaned by washing in hot water containing detergent, rinsing with tap and distilled water, and rinsing with solvent or baking?	4.3, 6.1.2				
Were boiling flasks that contained the extracted residue dried in an oven at 105-115°C and stored in a desiccator?	4.3				
If samples were to have their analyses delayed for more than four hours after collection, did samples have pH adjusted to <2, and were they refrigerated at 0-4°C at the times of collection?	8.1.1				
Were proportionally smaller samples collected if samples suspected to have concentrations of HEM or SGT-HEM greater than 500 mg/L? (If preservation required, use a proportionally smaller amount of acid.)	8.1.2				
If items such as Matrix Spikes, Matrix Spike Duplicates, and/or Sample duplicates were analyzed, were duplicate sample aliquots collected and samples never split? (Samples must never be split according to this method, as issues of surface tension and container adherence will compromise analyte composition in samples.)	8.2				
Did the laboratory spike a minimum of 5 percent of all samples from a given sample site?	9.3				
Were all samples collected as "grab" samples, as analytes may adhere to sampling equipment used for composite samples? (Composites can be done by averaging the results of multiple grabs.)	8.3				
Were all samples refrigerated at 0-4°C from the time of collection until extraction and analyzed within 28 days?	8.4				

Notes/Comments:

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Did QC results fall within the acceptance limits on Table 1? For HEM: spike/ spike duplicate- 78-114% recovery, RPD within 18%. For SGT-HEM: spike/ spike duplicate- 64-132% recovery, RPD within 34%.	9.2.2.2 9.2.2.3 17.0 (Table 1)				
Was at least one sample out of each set of 20 samples from a sample site analyzed and used to determine the background concentration of HEM or SGT-HEM?	9.3.2				
Was balance calibration within $\pm 10\%$ (or $\pm 0.2\text{mg}$) at 2mg and within $\pm 0.5\%$ (or 5mg) at 1000mg?	10.1				
Were all samples and spike samples brought to room temperature before extraction?	11.1.1				
Were all samples and spike samples verified to have a pH of <2 prior to extraction without introducing pH paper or a pH measuring device into samples?	11.2.1				
Were boiling flasks and boiling chips dried in an oven for a minimum of 2 hours at 105-115°C then cooled in a desiccator?	11.3.1				
Were aqueous phases and solvent phases allowed to separate for a minimum of ten minutes after shaking?	11.3.5				
If emulsions formed between the organic phases and aqueous phases during extraction that were greater than one third the volume of the solvent layer, were the emulsions broken by some emulsion-breaking technique?	11.3.5				
If extracts were observed to be milky, were extracts allowed to stand for one hour, and then was the solvent layer decanted through sodium sulfate?	11.3.11				
For HEM, were the concentrations completed in less than thirty minutes?	11.4.1				
For HEM, were the filterings through sodium sulfate and the distillations repeated if crystals were observed in residues?	11.4.3				
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For HEM, were the processes of drying at 70 C, weighing, and cooling repeated until boiling flasks weight losses were < 4% or 0.5mg of the previous weights?	11.4.4				
For HEM, were the sample levels in bottles initially marked in such a way that analysts were able to determine the volume extracted?	11.4.5				
For SGT-HEM, did the laboratory know the HEM concentrations in samples prior to extraction, since 3g of silica gel absorbs 100mg of adsorbable materials? (This is to ensure that the capacity of the silica gel is not exceeded.)	11.5.1				
For SGT-HEM, did the laboratory always have less than 1000mg HEM in samples and use less than 30g silica gel, as there were concerns about extractable impurities in amounts of silica gel greater than 30 g? (Extract splitting is allowed if HEM in samples is >1000mg.)	11.5.3				
For SGT-HEM, were amounts of anhydrous silica gel used appropriate for the amounts of HEM expected in samples regarding the 3g silica gel/100mg extracted material rule?	11.5.3.1				
For SGT-HEM, after the analysis were residues completely dissolved in n-hexane?	11.5.2.1				
Were n-hexane rinses of sample bottles, filter papers, and separatory funnel rinses retained for analyses? (Except when filter papers were moistened or prepared.)	11.3.3 11.3.10 11.5.4				
Notes/Comments:					